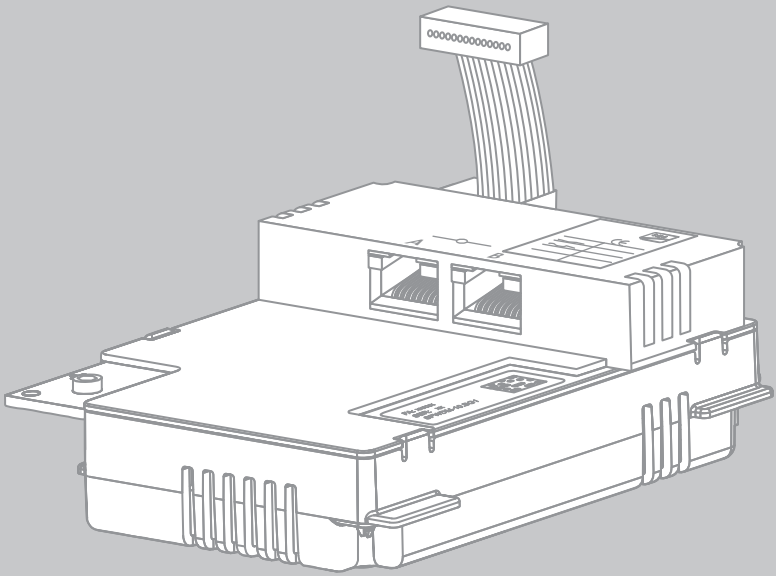
Installation Manual

SMA SPEEDWIRE/WEBCONNECT DATA MODULE



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1 Information on this Document

1.1 Validity

This document is valid for device type "SWDM-10.GR1" (Speedwire/Webconnect data module) from hardware version A and firmware version 1.00.20.R.

1.2 Target Group

The tasks described in this document must be performed by qualified persons only. Qualified persons must have the following skills:

- Training in the installation and commissioning of electrical devices and installations
- Knowledge of how to deal with the dangers and risks associated with installing and using electrical devices and installations
- Knowledge of all applicable standards and directives
- Knowledge of how an inverter works and is operated
- Knowledge of and compliance with this document and all safety precautions

1.3 Additional Information

Links to additional information can be found at www.SMA-Solar.com. Not all documents are available in all languages.

Document title	Document type
Firmware Update with SD Card	Technical Description
SMA Speedwire Fieldbus	Technical Information
SMA Modbus® Interface	Technical Description
SunSpec® Modbus® Interface	Technical Description

1.4 Symbols

Symbol	Explanation
⚠ DANGER	Indicates a hazardous situation which, if not avoided, will result in death or serious injury
⚠ WARNING	Indicates a hazardous situation which, if not avoided, can result in death or serious injury
⚠ CAUTION	Indicates a hazardous situation which, if not avoided, can result in minor or moderate injury
NOTICE	Indicates a situation which, if not avoided, can result in property damage
i	Information that is important for a specific topic or goal, but is not safety-relevant
☐	Indicates a requirement for meeting a specific goal
☑	Desired result
✖	A problem that might occur

1.5 Typographies

Typography	Explanation	Example
bold	• Display texts • Elements on a user interface • Terminals • Elements to be selected • Elements to be entered	• The value can be found in the field **Energy**. • Select **Settings**. • Enter the value **10** in the field **Minutes**.
>	• Connects several elements to be selected	• Select **Settings > Date**.
[**Button/Key**]	• Button or key to be selected or pressed	• Select [**Next**].

1.6 Nomenclature

Complete designation	Designation in this document
Photovoltaic system	PV system
Small-scale photovoltaic system	Small-scale PV system
Large-scale photovoltaic power plant	Large-scale PV power plant
SMA Cluster Controller	Cluster Controller
SMA Speedwire	Speedwire
SMA Speedwire/Webconnect Data Module	Speedwire/Webconnect Data Module
SMA Webconnect function	Webconnect function
SMA inverter	Inverter

1.7 Figures

The figures in this document have been created for Sunny Boy inverters and may deviate slightly in some cases for Sunny Tripower inverters.

2 Safety

2.1 Intended Use

The Speedwire/Webconnect data module is a Speedwire communication interface with Webconnect function for inverters.

Speedwire is a cable-based type of communication based on the Ethernet standard and the communication protocol SMA Data2+. This enables inverter-optimized 10/100 Mbit data transmission between Speedwire devices in PV systems. The Webconnect function enables direct data transmission between the inverters of a small-scale PV system and the Internet portal Sunny Portal without any additional communication device and for a maximum of four inverters per Sunny Portal system. For this, a Speedwire/Webconnect data module must be installed in each of the inverters. You can access your Sunny Portal system from any computer with an Internet connection.

The inverter still complies with the standard after the product has been installed.

For safety reasons, it is not permitted to modify the product or install components that are not explicitly recommended or distributed by SMA Solar Technology AG for this product.

The type label must remain permanently attached to the product.

Use the Speedwire/Webconnect data module only in accordance with the enclosed documentation and with the local standards and directives. Any other application may cause personal injury or property damage.

The enclosed documentation is an integral part of this product.

- Read and observe the documentation.
- Keep the documentation in a convenient place for future reference.

2.2 Safety Precautions

This section contains safety precautions that must be observed at all times when working on or with the product. To prevent personal injury and property damage and to ensure long-term operation of the product, read this section carefully and follow all safety precautions at all times.

⚠ DANGER

Danger to life due to electric shock when opening the inverter

High voltages are present in the conductive components of the inverter. Touching live components results in death or serious injury.

- Prior to performing any work on the inverter, always disconnect the inverter from all voltage sources on the AC and DC sides (see inverter installation manual). Observe the waiting time to allow the capacitors to discharge.

⚠ CAUTION

Risk of burns due to hot enclosure parts

Some parts of the inverter enclosure can get hot during operation. Touching these enclosure parts can result in burn injuries.

- Do not touch any parts other than the lower enclosure lid of the inverter during operation.

NOTICE

Damage to the inverter due to electrostatic discharge

The internal components of the inverter can be irreparably damaged by electrostatic discharge.

- Ground yourself before touching any inverter component.

2.3 Operating Instructions

NOTICE

High costs possible due to inappropriate Internet tariffs

When using the Webconnect function, a constant Internet connection is required.

Depending on the quality of the Internet connection, the data transfer volume for an inverter is between 150 MB and 550 MB per month. When using the system overview in Sunny Portal with live data display, there is an additional data volume of 600 kB per hour.

- Since there is a permanent Internet connection to Sunny Portal, time-based billing systems should be avoided. High costs could be incurred. SMA Solar Technology AG recommends using an Internet flat rate.

If UMTS is used, VoIP is required

If UMTS is used, VoIP (Voice over IP) is required to use the Webconnect function.

- Ensure that the UMTS provider also provides the VoIP service.

2.4 Supported Products

SMA inverter

The Speedwire/Webconnect data module must only be installed in the following SMA inverters from the indicated inverter firmware version:

SMA Inverter*	From inverter firmware version
SB 2500TLST-21	2.53**
SB 3000TLST-21	
SB 3000TL-21	
SB 3600TL-21	
SB 4000TL-21	
SB 5000TL-21	
SB 6000TL-21	
STP 8000TL-10	
STP 10000TL-10	
STP 12000TL-10	
STP 15000TL-10	
STP 17000TL-10	
STP 15000TLEE-10	
STP 15000TLHE-10	
STP 20000TL-30	all
STP 25000TL-30	
STP 20000TLEE-10	2.53**
STP 20000TLHE-10	

* For information on which of these SMA inverters with Speedwire/Webconnect data module supports the Modbus interface of the Speedwire/Webconnect data module, see the datasheet "SMA_Modbus-DB-en.xlsx" at www.SMA-Solar.com.

** If the firmware version of the inverter is lower than 2.53, you must perform a firmware update to version 2.53 or higher for this inverter. For information on performing the firmware update, refer to the Technical Description "Firmware Update with SD Card" at www.SMA-Solar.com.

Additional SMA Products

The Speedwire/Webconnect data module can be configured with the following communication products:

- SMA Cluster Controller from firmware version 1.0
- Sunny Explorer from software version 1.06
- SMA Connection Assist from software version 1.00.8.R

Sunny Explorer and SMA Connection Assist are available free of charge at www.SMA-Solar.com.

3 Scope of Delivery

Check the delivery for completeness and any visible external damage. Contact your distributor if the scope of delivery is incomplete or if there is any damage.

Order option: Speedwire/Webconnect data module pre-installed in the inverter

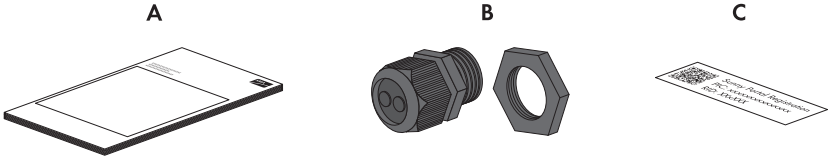


Figure 1: Components of the order option "Speedwire/Webconnect data module pre-installed in the inverter"

Position	Quantity	Designation
A	1	Installation manual
B	1	M32 cable gland with sealing plug, two-hole cable support sleeve and counter nut
C	1	Label with PIC (Product Identification Code, identification key for registration in Sunny Portal) and RID (Registration Identifier, registration ID in Sunny Portal)

Order Option: Speedwire/Webconnect data module as retrofit kit

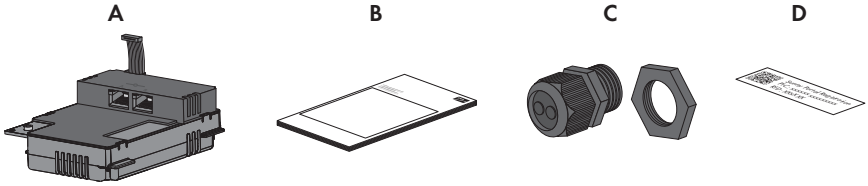


Figure 2: Components of the order option "Speedwire/Webconnect data module as retrofit kit"

Position	Quantity	Designation
A	1	Speedwire/Webconnect data module (SWDM-10)
B	1	Installation manual
C	1	M32 cable gland with sealing plug, two-hole cable support sleeve and counter nut
D	2	Label with PIC and RID for registration of a small-scale PV system in Sunny Portal

4 Product Description

4.1 Speedwire/Webconnect Data Module

The Speedwire/Webconnect data module is a Speedwire communication interface with Webconnect function for inverters.

Speedwire is a cable-based type of communication based on the Ethernet standard and the communication protocol SMA Data2+. This enables inverter-optimized 10/100 Mbit data transmission between Speedwire devices in PV systems. The Webconnect function enables direct data transmission between the inverters of a small-scale PV system and the Internet portal Sunny Portal without any additional communication device and for a maximum of four inverters per Sunny Portal system. For this, a Speedwire/Webconnect data module must be installed in each of the inverters. You can access your Sunny Portal system from any computer with an Internet connection.

The Speedwire/Webconnect data module performs the following tasks:

- Set-up of a Speedwire network in small-scale and large-scale PV power plants
- Data exchange with Sunny Portal:
  - In small-scale PV systems via a router with Internet connection
  - In large-scale PV power plants via the Cluster Controller
- Data exchange with Sunny Explorer from version 1.06
- For PV systems in Italy: Connection to or disconnection from the utility grid and definition of the frequency limits to be used with IEC61850-GOOSE messages
- The Modbus interface* of the Speedwire/Webconnect data module is designed for industrial use and has the following tasks:
  - Remote query of measured values
  - Remote setting of parameters
  - Setpoint specifications for system control

The Speedwire/Webconnect data module is available as a retrofit kit or is pre-installed in the inverter.

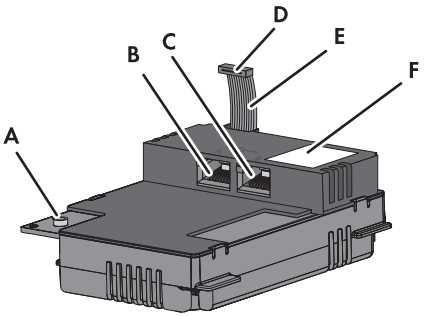


Figure 3: Design of the Speedwire/Webconnect data module

* For information on which of the supported SMA inverters (see Section 2.4) support the Modbus interface of the Speedwire/Webconnect data module, see the datasheet "SMA_Modbus-DB-en.xlsx" at www.SMA-Solar.com.

Position	Designation
A	Hexagon socket screw (AF 3)
B	Network port A
C	Network port B
D	Ribbon cable plug
E	Ribbon cable
F	Type label

Label with PIC and RID for registration of a small-scale PV system in Sunny Portal

To activate the Speedwire/Webconnect data module of a small-scale PV system in Sunny Portal, you will need the PIC and RID numbers printed on the label included in the delivery. After installation of the Speedwire/Webconnect data module, a label should be attached to the exterior of the inverter in the vicinity of the type label. Keep the other label in a safe place for future reference.

4.2 Possible Network Topologies

The possible network topologies depend on the devices used and on the number of network ports. The Speedwire/Webconnect data module has two network ports. For further information on network topologies, refer to the Technical Information "SMA Speedwire Fieldbus" at www.SMA-Solar.com.

4.3 Type Label

The type label clearly identifies the product. The type label is located in the right-hand top corner on the front of the product. You can read the following data from the type label:

- Device type (Type)
- Serial number (Serial No.)
- Hardware version (Version)
- PIC
- RID
- MAC address (MAC Address)

You will require the information on the type label to use the product safely and when seeking customer support from the SMA Service Line.

Symbols on the Type Label

Symbol	Designation	Explanation
CE	CE marking	The product complies with the requirements of the applicable EU directives.
N23114	C-Tick	The product complies with the requirements of the applicable Australian EMC standards.
	Data matrix code	2D code for device-specific characteristics

4.4 Cable Gland

The cable gland fixes the network cables to the inverter enclosure. The cable gland also protects the interior of the inverter from dust intrusion and moisture penetration.

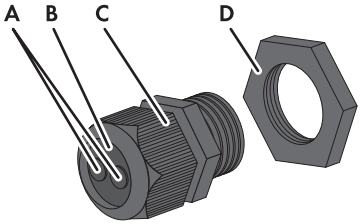


Figure 4: Design of cable gland

Position	Designation
A	Filler plug
B	Seal
C	Swivel nut
D	Counter nut

5 Connection

5.1 Mounting Position and Cable Route

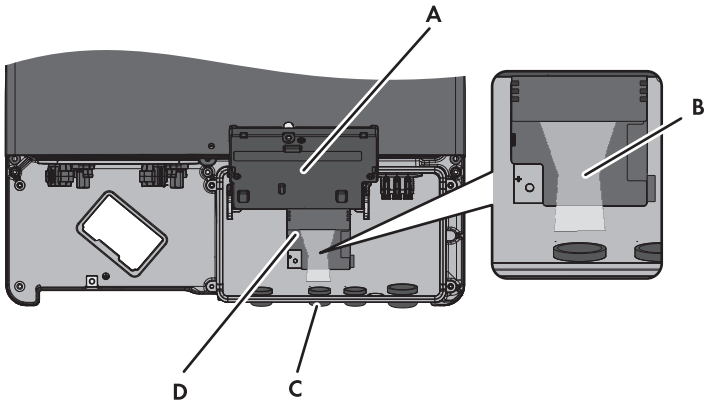


Figure 5: Mounting position and cable route in the inverter with the lower enclosure lid open and the display flipped up

Position	Designation
A	Flipped up display
B	Cable route to the network ports
C	Opening in the inverter enclosure with filler plug
D	Mounting position of the Speedwire/Webconnect data module in the inverter

5.2 Cable Requirements and Information on Cable Routing

The cable length and cable quality affect the signal strength in the Speedwire network. Observe the following cable requirements and the information on cable laying.

Interference in data transmission due to unshielded energy cables

If unshielded power cables are used, they generate an electromagnetic field during operation which may induce interference in network cables during data transmission.

- When laying network cables, observe the following minimum clearances to unshielded energy cables:
  - For installation without separating strip: at least 200 mm
  - For installation with aluminum separating strip: at least 100 mm
  - For installation with steel separating strip: at least 50 mm

Cable requirements:

- ☐ UV-resistant for outdoor use
- ☐ Number of insulated conductor pairs and insulated conductor cross-section: at least 2 x 2 x 0.22 mm^2 or at least 2 x 2 AWG 24
- ☐ External diameter of the cable: the maximum external diameter of the cable depends on the size of the cable gland included in the delivery.
- ☐ Cable category: Cat5, Cat5e, Cat6, Cat6a, Cat7
- ☐ Cable shield: SF/UTP, S/UTP, SF/FTP, S/FTP
- ☐ Plug type: RJ45 for Cat5, Cat5e, Cat6, Cat6a
- ☐ Cable length between two nodes: max. 50 m with patch cable, max. 100 m with installation cable

SMA Solar Technology AG recommends the following cable types:

- For outdoor use: SMA COMCAB-OUTxxx*
- For indoor use: SMA COMCAB-INxxx*

The cables are available in the lengths xxx = 100 m, 200 m, 500 m, and 1,000 m.

5.3 Installing the Speedwire/Webconnect Data Module

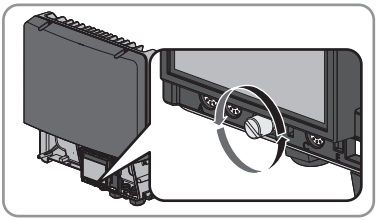
1. **⚠ DANGER**

   Danger to life due to electric shock when opening the inverter

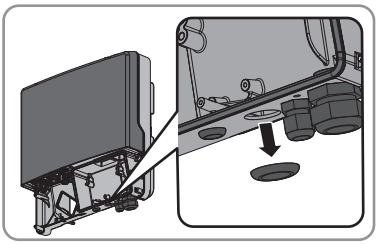
   High voltages are present in the conductive components of the inverter. Touching live components results in death or serious injury.

   - Disconnect the inverter from all voltage sources on the AC and DC sides and open it (see the inverter installation manual). Observe the waiting time to allow the capacitors to discharge.

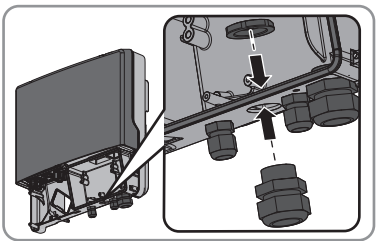
2. Release the screw of the display far enough to allow the display to be flipped up.



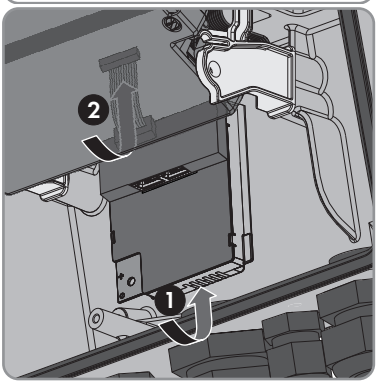
3. Flip up the display until it snaps into place.
4. Push the pre-mounted filler plug out of the second hole from the left in the inverter enclosure and retain it for future decommissioning.



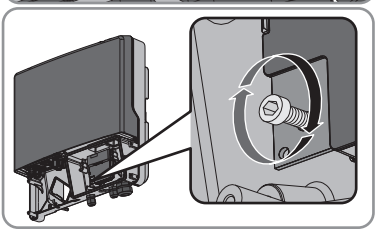
5. Attach the cable gland to the enclosure opening using the counter nut.



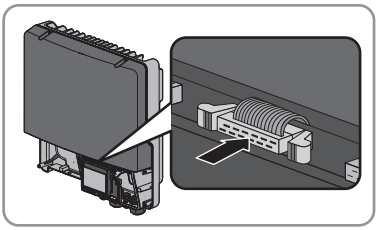
6. Insert the Speedwire/Webconnect data module and slide the ribbon cable upwards behind the display. The key on the top edge of the Speedwire/Webconnect data module must fit into the hole in the plastic retainer in the inverter.



7. Fasten the Speedwire/Webconnect data module hand-tight using a hexagon socket screw (AF 3, torque: 1.5 Nm).



8. Flip the display down.
9. Plug the ribbon cable plug onto the center connector strip.



10. Stick one of the labels with the data for registration in Sunny Portal (PIC and RID) on the outside of the inverter in the vicinity of the type label.
11. If you do not wish to proceed immediately with the connection of the Speedwire/Webconnect data module, close the inverter (see inverter installation manual).

5.4 Connecting the Speedwire/Webconnect Data Module

Depending on the system topology you require, you must connect either one or two cables to the Speedwire/Webconnect data module.

Requirement:

☐ The network cables must be pre-assembled in accordance with the system topology and the cable requirements (see Section 5.2, page 15).

Additionally required material (not included in the scope of delivery):

☐ Network cable (see Section 5.2 "Cable Requirements and Information on Cable Routing", page 15)

Procedure:

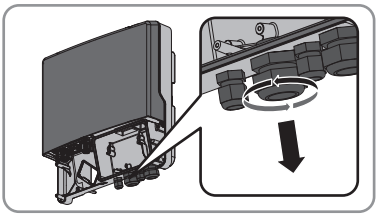
1. **⚠ DANGER**

   Danger to life due to electric shock when opening the inverter

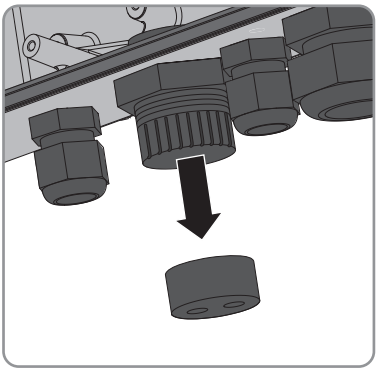
   High voltages are present in the conductive components of the inverter. Touching live components results in death or serious injury.

   - If the inverter has not yet been opened, disconnect the inverter from all voltage sources on the AC and DC sides and open it (see the inverter installation manual). Observe the waiting time to allow the capacitors to discharge.

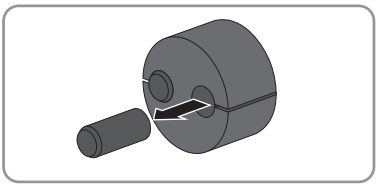
2. Flip the display up until it snaps into place.
3. Unscrew the swivel nut of the cable gland on the inverter.



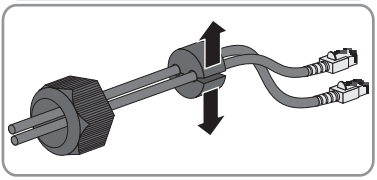
4. Press the seal out of the cable gland from the inside.



5. Lead the network cables from the outside into the inverter through the loose swivel nut and the cable gland.
6. For each network cable, remove one of the filler plugs from the seal and retain for later decommissioning.



7. Lead the network cables through the swivel nut and into the seal. Route the network cable plugs into the inverter to the network ports.



8. Press the seal into the cable gland. Ensure that any unused cable openings are sealed with filler plugs.
9. Screw the swivel nut of the cable gland on loosely.
10. Insert the network cables into the network ports. This can be done in any order.
11. Fasten the swivel nut on the cable gland hand-tight. This will fix the network cables in place.
12. Flip the display down and fasten the screw of the display hand-tight.
13. Close the inverter (see inverter installation manual).
14. In a small-scale PV system, depending on the system topology, connect at least one inverter directly to the router using a network cable.
15. In a large-scale PV power plant with Cluster Controller, connect the Cluster Controller to the Speedwire network in accordance with the required network topology (see installation manual of the Cluster Controller).

6 Commissioning

6.1 Commissioning a Large-Scale PV Power Plant with Cluster Controller

Requirements:

- ☐ Speedwire/Webconnect data modules must be installed in the inverters (see Section 5.3, page 16).
- ☐ Speedwire/Webconnect data modules must be connected (see Section 5.4, page 18).
- ☐ The Cluster Controller must be connected to the Speedwire network in accordance with the desired network topology (see installation manual of the Cluster Controller).

Procedure:

1. Commission all inverters (see inverter installation manual).
2. For optimum operation of large-scale PV power plants with Cluster Controller, deactivate the Webconnect function of the inverters with installed Speedwire/Webconnect data module (see user manual of the Cluster Controller). In large-scale PV power plants with Cluster Controller, communication with Sunny Portal takes place via the Cluster Controller itself.

6.2 Commissioning a Small-Scale PV System

Requirements:

- ☐ Speedwire/Webconnect data modules must be installed in the inverters (see Section 5.3, page 16).
- ☐ Speedwire/Webconnect data module must be connected (see Section 5.4, page 18).
- ☐ There must be a router with Internet connection in the local network of the system.
- ☐ At least one inverter must be connected to the router.
- ☐ If the IP addresses in the local network are to be assigned dynamically, DHCP must be activated in the router (see the router manual). If you do not want to use DHCP or your router does not support DHCP, use either SMA Connection Assist or Sunny Explorer to integrate the inverters with the Speedwire/Webconnect data module into your network (see Section 2.4 "Supported Products", page 10).

Procedure:

1. Commission all inverters (see inverter installation manual).
2. For systems in Italy, in order to activate reception of control signals from the grid operator in the Speedwire/Webconnect data module, carry out the following steps:
   - Connect with Sunny Explorer (see Section 6.3.2, page 22).
   - Enter your personal SMA Grid Guard code in Sunny Explorer (see Sunny Explorer help).

- Set the following parameters in Sunny Explorer (for setting parameters in a device, see Sunny Explorer help):

External communication > IEC 61850 configuration			
Parameter	**Value/range**	**Resolution**	**Default**
Application-ID	0 to 16384	1	16384
Goose-Mac address	01:0C:CD:01:00:00 to 01:0C:CD:01:02:00	1	01:0C:CD:01:00:00

- In the field **Application-ID**, enter the application ID of the grid operator gateway. You will receive this value from your grid operator. You can enter a value between **0** and **16384.** The value **16384** indicates "deactivated".
- In the field **Goose-Mac address**, enter the MAC address of the grid operator gateway from which the Speedwire/Webconnect data module is to receive the control commands. You will receive this value from your grid operator.

☑ The receipt of grid operator control signals is now activated.

6.3 Managing a Small-Scale PV System with Sunny Explorer

6.3.1 Functions and Parameter Settings in Sunny Explorer

The following functions for system management are available in Sunny Explorer:

- Overview of the system status
- Graphic display of key PV system data, device data and energy values
- Parameterization of individual devices or entire device classes
- Simple diagnostics thanks to display of errors and events
- Data export of inverter energy values and events in CSV format
- Device updates

You can change the following parameters in Sunny Explorer:

- Device name of the inverter
- Automatic IP configuration On/Off
- DNS-IP, gateway IP, IP address, subnet mask
- Webconnect function On/Off

6.3.2 Creating a Small-Scale PV System in Sunny Explorer

Requirements:

☐ The system must be commissioned (see Section 6.2, page 20).

☐ Sunny Explorer must be installed on the computer (see Section 2.4 "Supported Products", page 10).

Procedure:

1. Connect the computer to the system router with a network cable.
2. If you have used SMA Connection Assist for the static network configuration, ensure that SMA Connection Assist has ended.
3. Start Sunny Explorer and create a Speedwire system for the small-scale PV system in Sunny Explorer (see Sunny Explorer help).

6.4 Configuring the Modbus Function

If you wish to access SMA inverters with Modbus interface, make sure that the Modbus connection of the devices has been configured correctly. In devices with Modbus, the same port must be set up for the Modbus communication. The Modbus function has been deactivated by default in the Speedwire/Webconnect data module and port 502 has been set for the Modbus servers TCP and UDP. For information on using the Modbus interface, see the Technical Descriptions "SMA Modbus® Interface" or "SunSpec® Modbus® Interface" at www.SMA-Solar.com.

For information on which of the supported SMA inverters (see Section 2.4) support the Modbus interface of the Speedwire/Webconnect data module, see the datasheet "SMA_Modbus-DB-en.xlsx" at www.SMA-Solar.com.

Procedure:

- If necessary, adjust the preset ports in the Speedwire/Webconnect data module for the Modbus communication (see the Technical Descriptions "SMA Modbus® Interface" or "SunSpec® Modbus® Interface" at www.SMA-Solar.com).

6.5 System Registration in Sunny Portal

6.5.1 Registering a Large-Scale PV Power Plant with Cluster Controller in Sunny Portal

Requirements:

- ☐ The large-scale PV power plant must be commissioned (see Section 6.1, page 20).
- ☐ Your computer must have an Internet connection.
- ☐ The Cluster Controller must be connected to a router with Internet connection (see installation manual of the Cluster Controller).
- ☐ JavaScript must be enabled in the web browser.

Procedure:

- In large-scale PV power plants with Cluster Controller, register in Sunny Portal via the user interface of the Cluster Controller (see user manual of the Cluster Controller).

6.5.2 Registering a Small-Scale PV System in Sunny Portal

Requirements:

- ☐ The small-scale PV system must be commissioned (see Section 6.2, page 20).
- ☐ PIC and RID of the Speedwire/Webconnect data module must be available.
- ☐ Your computer must have an Internet connection.
- ☐ JavaScript must be enabled in the web browser.
- ☐ All UDP ports > 1024 on the router must be open for outgoing connections. If there is a firewall installed on the router, you might have to adjust the firewall settings.
- ☐ It must be possible for the outgoing router connections to reach all Internet destinations (target IP, target port). If there is a firewall installed on the router, you might have to adjust the firewall settings.
- ☐ On the router with NAT (Network Address Translation), no port forwarding must be entered. Potential communication problems can thus be prevented.
- ☐ There must be no packet filtering or manipulation for SIP packets installed on the router.

Maximum permissible number of devices for a small-scale PV system in Sunny Portal

In Sunny Portal, a maximum of four inverters with installed Speedwire/Webconnect data module is permitted per small-scale PV system.

Small-scale PV system with Speedwire/Webconnect data module cannot be combined with other systems

If you already have a system with a different communication device, e.g. Sunny WebBox, in Sunny Portal, you will still need to create a separate small-scale PV system with Speedwire/Webconnect data module. It is not possible to combine the Speedwire/Webconnect data module and other communication devices within one system in Sunny Portal. Sunny Portal treats the existing system and the new small-scale PV system with Speedwire/Webconnect data module as independent systems.

- Create a new small-scale PV system with Speedwire/Webconnect data module.

Replacing the Speedwire/Webconnect data module in the inverter

If you have replaced the Speedwire/Webconnect data module in the inverter with a new Speedwire/Webconnect data module, the PIC and the RID of the inverter change. Therefore, you must also replace the inverter using the PV System Setup Assistant in Sunny Portal (see the Sunny Portal user manual). In the PV System Setup Assistant, you must enter the PIC and the RID of the new Speedwire/Webconnect data module.

Starting the PV System Setup Assistant in Sunny Portal

The PV System Setup Assistant is a step-by-step guide to the processes required for user registration and the registration of your system in Sunny Portal

Procedure:

1. Go to **www.SunnyPortal.com**.
2. Select [**PV System Setup Assistant**].
   ☑ The PV System Setup Assistant opens.
3. Follow the instructions of the PV System Setup Assistant.

7 Decommissioning

7.1 Removing the Speedwire/Webconnect Data Module

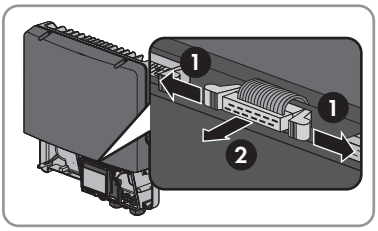
1. **⚠ DANGER**

   Danger to life due to electric shock when opening the inverter

   High voltages are present in the conductive components of the inverter. Touching live components results in death or serious injury.

   - Disconnect the inverter from all voltage sources on the AC and DC sides and open it (see the inverter installation manual). Observe the waiting time to allow the capacitors to discharge.

2. Press the left-hand and right-hand lock hooks outwards and remove the ribbon cable plug from the center connector strip of the inverter.



3. Release the screw of the display far enough to allow the display to be flipped up.
4. Flip up the display until it snaps into place.
5. Unscrew the swivel nut of the cable gland.
6. Remove the network cables from the Speedwire/Webconnect data module.
7. Unscrew the counter nut of the cable gland.
8. Remove the cable gland and network cables from the inverter.
9. Release the hexagon socket screw (AF 3) of the Speedwire/Webconnect data module and remove the module.
10. Flip the display down and fasten the display screw hand-tight.
11. Seal the enclosure opening of the inverter with the corresponding filler plug.
12. Close the inverter (see inverter installation manual).

7.2 Packaging the Speedwire/Webconnect Data Module for Shipping

- Pack the Speedwire/Webconnect data module for shipping. Use the original packaging or packaging that is suitable for the weight and size of the Speedwire/Webconnect data module (see Section 9 "Technical Data", page 28).

7.3 Disposing of the Speedwire/Webconnect Data Module

- Dispose of the Speedwire/Webconnect data module in accordance with the regulations for the disposal of electronic waste applicable at the installation site.

8 Troubleshooting

Corrective measures regarding Modbus errors

Corrective measures regarding Modbus errors can be found in the Technical Descriptions "SMA Modbus® Interface" or "SunSpec®Modbus® Interface".

Problem	Cause and corrective measures
The Speedwire/ Webconnect data module cannot be accessed.	Possibly, there is no Speedwire connection. **Corrective measures:** • Ensure that all network cable plugs are inserted and locked. • Ensure that all inverters in the system are in operation. • Ensure that the system router is switched on. • Ensure that the ribbon cable plug of the Speedwire/Webconnect data module is correctly plugged into the center connector strip in the inverter.
	The Webconnect/Speedwire data module might not have a valid IP address. **Corrective measures:** • Ensure that DHCP is enabled for the router. **or** • Assign an appropriate static IP address to the Speedwire/ Webconnect data module via SMA Connection Assist or Sunny Explorer. You can obtain the Sunny Explorer and SMA Connection Assist software free of charge from the download area at www.SMA-Solar.com.
	The firewall may not be set correctly. **Corrective measures:** • In the firewall, activate ports 3478 and 9523 (see firewall manual).
	It is possible that the UDP ports in the router for outgoing connections are not open. **Corrective measures:** • Open the UDP ports > 1024 in the router for outgoing connections.
	The IP filter might not have been set up correctly. **Corrective measures:** • Adjust the IP filter settings (see router manual).

Problem	Cause and corrective measures
The Speedwire/ Webconnect data module cannot be accessed.	It is possible that packet filtering or manipulation for SIP packets is installed on the router. **Corrective measures:** • Uninstall the packet filtering for SIP packets or the manipulation for SIP packets on the router.
	It is possible that port forwarding has been entered on the router with NAT function (Network Address Translation). **Corrective measures:** • Remove the port forwarding from the router with NAT function.
	It is possible that the inverter does not recognize the Speedwire/ Webconnect data module. The firmware version of the inverter is not supported (see Section 2.4, page 10). **Corrective measures:** • Update the inverter firmware (see the Technical Description "Firmware Update with SD Card" at www.SMA-Solar.com).

9 Technical Data

General	
Mounting location	in the inverter
Voltage supply	via the inverter
Mechanical Data	
Width x height x depth	73 mm x 88 mm x 34 mm
Communication	
Communication interface	Speedwire/Webconnect
Maximum cable length	100 m
Protocols	
Data interface	SMA Modbus, SunSpec
Terminals	
Type of plug	RJ45
Number of RJ45 terminals	2
Ambient Conditions for Storage/Transport	
Ambient temperature	− 40°C to +85°C
Relative humidity, non-condensing	10% to 100%

10 Contact

If you have technical problems concerning our products, please contact the SMA Service Line. We need the following information in order to provide you with the necessary assistance:

- Inverters:
  - Device type and serial number (see type label)
  - Firmware version (tap twice on the inverter display or see Sunny Portal or Sunny Explorer)
- Speedwire/Webconnect data module:
  - Device type, serial number and hardware version (see type label)
  - Number of Speedwire/Webconnect data modules connected
- Large-scale PV power plants:
  - Serial number and firmware version of the Cluster Controller
- Small-scale PV systems:
  - Name of your Sunny Portal system
  - PIC and RID of the Speedwire/Webconnect data module

Australia	SMA Australia Pty Ltd. Sydney	Toll free for Australia:	1800 SMA AUS (1800 762 287)
		International:	+61 2 9491 4200
Belgien/ Belgique/ België	SMA Benelux BVBA/SPRL Mechelen	+32 15 286 730	
Brasil	Vide España (Espanha)		
Česko	SMA Central & Eastern Europe s.r.o. Praha	+420 235 010 417	
Chile	Ver España		
Danmark	Se Deutschland (Tyskland)		

Deutschland	SMA Solar Technology AG Niestetal	Medium Power Solutions	
		Wechselrichter: Kommunikation:	+49 561 9522-1499 +49 561 9522-2499
		SMA Online Service Center: www.SMA.de/Service	
		Hybrid Energy Solutions	
		Sunny Island:	+49 561 9522-399
		PV-Diesel Hybridsysteme:	+49 561 9522-3199
		Power Plant Solutions	
		Sunny Central:	+49 561 9522-299
España	SMA Ibérica Tecnología Solar, S.L.U. Barcelona	Llamada gratuita en España:	900 14 22 22
		Internacional:	+34 902 14 24 24
France	SMA France S.A.S. Lyon	Medium Power Solutions	
		Onduleurs : Communication :	+33 472 09 04 40 +33 472 09 04 41
		Hybrid Energy Solutions	
		Sunny Island :	+33 472 09 04 42
		Power Plant Solutions	
		Sunny Central :	+33 472 09 04 43
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Κύπρος/ Kıbrıs	Βλέπε Ελλάδα/ Bkz. Ελλάδα (Yunanistan)		
Luxemburg/ Luxembourg	Siehe Belgien Voir Belgique		
Magyarország	lásd Česko (Csehország)		
Nederland	zie Belgien (België)		
Österreich	Siehe Deutschland		
Perú	Ver España		
Polska	Patrz Česko (Czechy)		

Portugal	SMA Solar Technology Portugal, Unipessoal Lda Lisboa	Isento de taxas em Portugal:	800 20 89 87
		Internacional:	+351 2 12 37 78 60
România	Vezi Česko (Cehia)		
Schweiz	Siehe Deutschland		
Slovensko	pozri Česko (Česká republika)		
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България	Вижте Ελλάδα (Гърция)		
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